L. M. GRACE, JR.

IBLA 86-618 Decided October 31, 1988

Appeal from a decision of the Wyoming State Office, Bureau of Land Management, rejecting simultaneous oil and gas lease offer W-93375.

Affirmed.

l. Oil and Gas Leases: Known Geologic Structure

> A BLM determination that lands are within a known geologic structure of a producing oil or gas field will be sustained on appeal where the record shows that these lands are underlain by a formation determined to be productive elsewhere in the area, and where appellant fails to establish by a preponderance of the evidence that the designation is in error.

APPEARANCES: L. M. Grace, Jr., pro se; Lowell L. Madsen, Esq., Office of the Regional Solicitor, Denver, Colorado, for the Bureau of Land Management.

OPINION BY ADMINISTRATIVE JUDGE HUGHES

L. M. Grace, Jr., has appealed from a decision dated December 31, 1985, by the Wyoming State Office, Bureau of Land Management (BLM), rejecting his simultaneous oil and gas lease offer (W-93375) because the lands embraced by the offer had been determined to be within the Wind River Known Geologic Structure (KGS) effective November 1, 1985. 1/

By notice dated May 23, 1985, BLM informed appellant that he was the priority drawee for parcel WY 391 in the February 1985 simultaneous oil and gas filing. Appellant's lease offer was for the following described 960 acres in Fremont County, Wyoming: T. 36 N., R. 92 W., sixth principal meridian, sec. 11, S\; sec. 12, All. These lands are near the southern boundary of the Wind River KGS, as subsequently placed by BLM.

BLM's geologic report for the Wind River KGS indicates that the Lower Fort Union Formation is the presumptively productive horizon: "The Lower Fort Union Formation produces natural gas from a number of fields in the northern portion of the Wind River Basin. Between these fields are a number of wells penetrating the Lower Fort Union, most of which have 'shows' of

1/ BLM's KGS action combined the Squaw Butte "A", Dinty Moore Res., Poison Creek, Fuller Res., Frenchie Draw, and Frenchie Draw-Lost Cabin KGS's into the new Wind River KGS.

gas." The KGS boundary was drawn to include all sections cut by the Lower Fort Union Formation's 1,500-foot isopach line on the southern boundary and all sections cut by its 7-percent sand line on the northern boundary: "To the south where the Lower Fort Union formation is less than 1500 feet thick the number of completed gas wells and wells with good gas shows in the formation drop off significantly." The lands that appellant applied for are just north of the 1,500-foot isopach line, as determined by BLM. Thus, the validity of BLM's use of the 1,500-foot isopach as the boundary of the KGS is at issue here.

BLM's geologic report states that, within the geologic limits of the KGS (greater than 7-percent sand and thicknesses greater than 1,500 feet), there are 65 wells which penetrate the Lower Fort Union Formation. Twenty-eight of these were completed as gas wells. Twenty-five of the remaining wells had shows of gas, eight did not test the Lower Fort Union Formation, and four tested but delivered no gas.

Additionally, BLM's geologic report discusses the contact between the Lower Fort Union Formation and the Lance Formation, which underlies it:

> The contact between the Lower Fort Union and the underlying Lance Formation can also be difficult to identify precisely. Nearer the edges of the basin there is a slight angular unconformity between the formations. * * * This unconformity disappears a short distance into the subsurface. * * * [T]he Lower Fort Union-Lance contact in the central part of the basin appears to coincide with a change from predominantly interbedded shale, claystone, and fine-grained sandstone below to predominantly sandstone above. This lithologic change can be identified on the well logs and was used in this study to determine the general location of the Fort Union-Lance contact. The exact location of the contact for the purposes of this study was determined to be the top of the uppermost thick, well defined-shale encountered in this transition zone. [2/]

(Geologic Report at 2).

Appellant refers in his statement of reasons to two wells. He notes that the Humble Oil Sand Hills Unit #2 Well, actually located on the lands applied for, had no shows of gas in the Lower Fort Union Formation, had no tests in the Lower Fort Union Formation, and was abandoned in 1960 as a dry hole. 3/ He also challenges BLM's placement of the Fort Union-Lance contact, citing well log data from the Natural Gas #1 Federal Well, located in a section cornering most of the lands applied for, as demonstrating that the Lower Fort Union-Lance contact is elsewhere.

2/ As BLM relied on production from the Lower Fort Union Formation to establish the KGS, its reasons for addressing the Fort Union-Lance contact in the geologic report are not immediately apparent and have not been fully explained.

3/ According to appellant, the Sand Hills Unit #2 Well did test the underlying Lance formation, with a "minor gas show."

BLM's answer does not discuss the Natural Gas #1 Federal Well. However, its sand percentage and isopach maps classify it as a dry hole, but with a show of gas. As to the Sand Hills Unit #2 Well, BLM's answer states:

> We agree that no tests were conducted in the Lower Fort Union. We therefore, did some analysis of the electric logs * * * run in this hole by Schlumberger Well Surveying Corporation. Specifically, the sand from 7504-7515 feet depth was analyzed. The water saturation of this zone was calculated to be 68%. This means that 68% of the pore volume of the rock is filled with water and 32% is filled with something else - presumably gas.

BLM compared this electric log analysis of the Natural Gas #1 Federal Well with the analysis for well number 22-25 Fuller Reservation II, which revealed a comparable water saturation of 64 percent, and which did produce natural gas. BLM noted, however, that the "presence of significant amounts of coal would make [its electric log] analysis invalid."

Appellant, in his reply brief, argues that BLM's electric log analysis was indeed rendered invalid by the presence of coal in all gas shows from the Lower Fort Union Formation, and that such gas shows "were almost exclusively methane." We presume that appellant asserts that the gas shows are attributable to methane that is associated with coal deposits rather than with reservoirs of natural gas. Appellant concludes that the "existence of a non-productive Lower Fort Union penetration with no shows on the lands in question further proves the inadequacy of using a 1,500 foot formation thickness as a criterion for classifying a lease KGS."

BLM, in a surrebuttal, counters that, if coal is present in all shows from the Lower Fort Union Formation, all electric logs would be erroneous. BLM defends its use of the 1,500-foot isopach as the southern boundary of the KGS:

> The 1500 foot formation thickness cut-off line is a line which designates the approximate depositional change between the primarily continental upland environment and the primarily lacustrine/shoreline environments. The production within the Wind River KGS is associated with the lacustrine/shoreline environment and the associated paludal or alluvial deposits. The gas production is from interbedded carbonaceous shales and interfingered coals within the Lower Fort Union interfingering and discontinuous sands.

[1] Section 17(b) of the Mineral Leasing Act, as amended, 30 U.S.C. | 226(b) (1982), provides that public domain lands within the KGS of a producing oil or gas field shall be leased by competitive bidding. A KGS is "technically the trap in which an accumulation of oil or gas has been discovered by drilling and determined to be productive, the limits of which include all acreage that is presumptive productive." 43 CFR 3100.0-5(l). No discretion exists in the Department to issue a noncompetitive lease, as appellant seeks, for lands properly determined to be within a KGS. McDonald

v. Clark, 771 F.2d 460, 464 (10th Cir. 1985); McDade v. Morton, 353 F. Supp. 1006 (D.D.C. 1973), aff'd, 494 F.2d 1156 (D.C. Cir. 1974). Where lands described in a noncompetitive oil and gas lease offer are determined to be within a KGS of a producing oil or gas field at any time prior to lease issuance, the noncompetitive lease offer must be rejected. 43 CFR 3112.5-2. The burden of showing by a preponderance of the evidence that BLM's determination is in error rests with appellant. Bender v. Clark, 744 F.2d 1424 (10th Cir. 1984).

In Thunderbird Oil Corp., 91 IBLA 195 (1986), aff'd sub nom., Planet Corp. v. Hodel, No. 86-679 HB (D.N.M. May 6, 1987), we noted that in classifying lands as KGS, BLM must merely establish that a producing structure exists which extends to the lands in question. By establishing this fact, BLM necessarily establishes that the land is presumptively productive. An appellant challenging such a determination must either show that the producing structure does not underlie the land or affirmatively establish, as a fact, that the land involved is not productive from the structure in question.

The well data from the area comprising the Wind River KGS amply show the presence of gas from the Lance Formation at thicknesses greater than 1,500 feet and also reveal that gas production decreases at thicknesses of less than 1,500 feet. Although the Sand Hills Unit #2 Well was apparently listed by its operator as a dry hole, it also appears that it did not test the Fort Union Formation and, therefore, may not be representative. In any event, the presence of a dry hole does not, by itself, bar lands from inclusion in a KGS, as it may simply establish the existence of a small, localized area lacking in production. Beard Oil Co., 99 IBLA 40, 45-6 (1987). Further, the presence of gas shows from the Natural Gas #1 Federal Well, which is located near the subject lands, supports BLM's decision to include these lands in the KGS. Such shows may properly be considered in determining a KGS. Carol Ann Hoffman, 100 IBLA 139 (1987).

It is sufficient for purposes of its KGS determination that BLM has determined the land to be underlain by the Lower Fort Union Formation from which various wells in the area have been productive. Appellant has not established by a preponderance of the evidence that there is no reasonable probability of productivity. Appellant's evidence is aimed at challenging the accuracy of BLM's description of the contact between the Lower Fort Union Formation and the Lance Formation. No adequate explanation has been offered as to how an inaccuracy in establishing this contact point undercuts BLM's decision to include this land in the KGS. Designation of land as situated within a KGS of a producing oil or gas field will be sustained on appeal where there is a reasonable probability the land is underlain by at least one sandstone body in a particular formation which has been determined to be productive in that area, and where appellant fails to establish by a preponderance of the evidence that the designation is in error. See Wally J. Picou, 95 IBLA 98 (1986).

Appellant asserts that the "only true way to tell whether a lease is productive is to drill a well." As we have noted in previous appeals, KGS designations cannot be based on geologic certainty. Nonetheless, where

BLM's KGS actions are supported by pertinent data and scientific reasoning, the Secretary is entitled to rely on the conclusions of his technical expert in the field. While appellant's geologic evaluations and disagreements with BLM may be reasonable, they fall short of the quantum of proof necessary to overturn a BLM KGS action. Ralph E. Peterson, 94 IBLA 340 (1986).

Therefore, pursuant to the authority delegated to the Board of Land Appeals by the Secretary of the Interior, 43 CFR 4.l, the decision appealed from is affirmed.

David L. Hughes
Administrative Judge

I concur:

Gail M. Frazier
Administrative Judge